

Trend Study 14-11-99

Study site name: Shay Mesa .

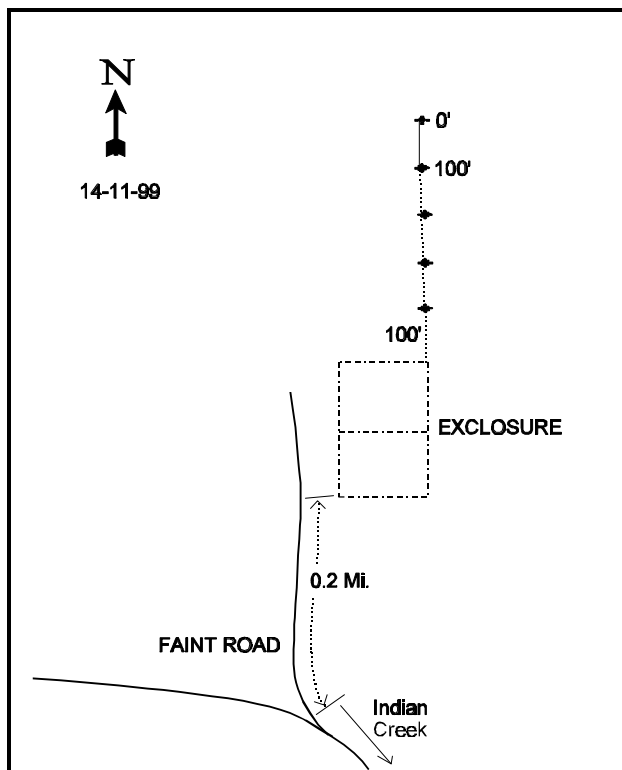
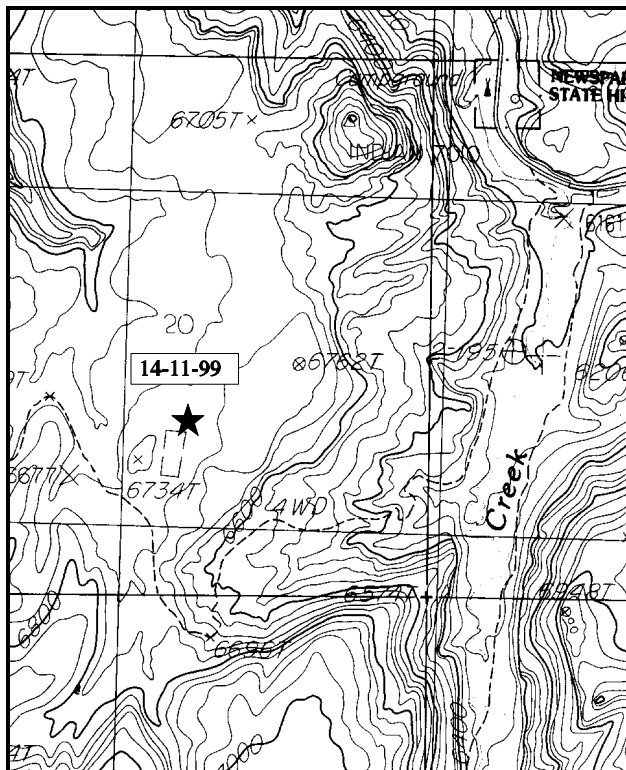
Range type: Chained, Cabled, Seeded P-J.

Compass bearing: frequency baseline 165°M.

Footmark (first frame placement) 5 feet, footmarks (frequency belts) line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

LOCATION DESCRIPTION

From the junction of SR-191 and 211 (about 14 miles north of Monticello), turn west on the road towards Canyonlands National Park and Newspaper Rock. Go approximately 13 miles on this paved road, the last two miles dropping into the canyon of a tributary to Indian Creek. Cross a cattleguard and turn left just before another cattleguard and 0.1 miles east of Newspaper Rock. Turn left on this road, cross Indian Creek and go 1.8 miles up onto the mesa. Look for a faint road going up to the right through an old pinyon-juniper chaining to an enclosure. Follow this road 0.2 miles to the north end of the enclosure. The end of the baseline is located 100 feet north of the northeast corner of the enclosure. The 0 foot end of the baseline is 400 feet north and the stake is tagged #7877.



Map Name: Shay Mountain

Diagrammatic Sketch

Township 32S , Range 22E , Section 20

UTM NO GPS

DISCUSSION

Trend Study No. 14-11 (35-11)

Located up on Shay Mesa, this study samples a mixed pinyon-juniper woodland with openings of sagebrush-grass which is established on an old chaining. This large chaining and seeding project was done in the mid 1960's on the high mesa foothills north of the Abajo Mountains. The seed mixture included crested wheatgrass, pubescent wheatgrass, alfalfa, and a ground application of four-wing saltbush, bitterbrush, and cliffrose at selected locations. There was little evidence of the seeding on this particular study site, as all species encountered during all readings were native. The transects sample an area near a BLM exclosure. The trend study was placed just outside a 1958 two-way exclosure (cattle and deer) which exhibits dramatic contrasts in plant composition between the total exclosure, livestock exclosure, and the outside. The lack of sagebrush in the grass dominated, livestock exclosure leads to the possible conclusion that cattle grazing could have contributed to keeping shrubs in the understory. The mixed sagebrush-grass outside the exclosure reflects a balance of use by cattle and deer. Shay Mesa is grazed by 200-300 cattle in fall or spring. Judging by sign and use on grasses in 1986, cattle use was moderate to heavy that year. Pellet group data from mid-June of 1999 estimate 26 cow use days/acre (64 cdu/ha). Nearly all of the pats sampled appear to be from last season. Only 1 deer day use/acre (2 ddu/ha) was estimated. Rabbit pellets were very numerous. General browsing use on the sagebrush has been moderate with some classified as heavy, but sagebrush protected in the exclosure show a similar growth and vigor condition. Pinyon and juniper provide good cover for wildlife with estimated densities of 28 juniper and 73 pinyon trees/acre on the site in 1994. Point quarter data from 1999 estimate 12 juniper and 86 pinyon trees/acre. Average diameter of pinyon trees sampled was 4.8 inches, while that of juniper was 5.2 inches. Currently ('99), pinyon provides 50% of the shrub cover and juniper contributes another 10%.

The area sampled shows percent bare ground fairly high at about 40% in 1994. Litter cover has decreased substantially since 1986. In places dominated by pinyon, there is much less plant cover and consequently a higher amount of exposed soil. This condition leads to a substantial amount of soil loss from these areas. The light red, fine-textured sandy clay loam soil has an effective rooting depth estimated at about 16 inches. It is quite susceptible to erosion. The soil has a neutral pH (7.3), low organic matter and phosphorus. There is one large gully about 20 yards northeast of the baseline which was active in 1986, but appears to be healing as of 1999. There were also many erosion channels and signs of sheet erosion found throughout the pinyon-juniper understory in 1986. There is still some signs of localized erosion, however it is not severe due to the gentle slope (about 2-5%). Drainage from the area is generally to the north. The study site has an eastern aspect and an elevation of about 6,700 feet, 700 feet above Indian Creek, which is a perennial stream.

The dominant over story is pinyon with a few juniper. The trees appear to be increasing and average between 6-15 feet in height with some of the juniper showing signs of high lining in 1986. The key forage species is mountain big sagebrush which has remained at a stable density since 1986 with an estimated population of about 2,200 plants/acre. The population has become increasingly mature through time. In 1986 only 21% of the population was mature, now in 1999, 85% are classified as mature. Percent decadence currently remains low at only 6%. Utilization was moderate to heavy in 1986, light in 1994, and moderate to heavy again in 1999. Due to the lack of deer pellet groups on the site, this utilization would be from livestock, especially with drought and the fact that most of the grass cover is from blue grama and cheatgrass.

There were some white-stemmed rubber rabbitbrush sampled in 1986, but none were encountered in 1994 or 1999. These rabbitbrush were apparently highly palatable and were heavily hedged during the 1986 reading. Other palatable browse species in the area are four-wing saltbush (warm season species), slender buckwheat, and winterfat (warm season species). These all show heavy use. Broom snakeweed, a small increaser subshrub, is also common.

Grasses are fairly common and although they showed the effects of grazing, especially when compared to the deer only exclosure. Nested frequency for perennial grasses has declined considerable since 1986. The

annual, cheatgrass, has increased significantly in frequency between 1994 and 1999. It currently provides 39% of the grass cover. All this points to the strong influence prolonged drought has on the plant communities.

Several typical pinyon-juniper associated forb species are present, although overall density and usefulness on this winter range is limited. The cover value for all the forbs combined was only a little over 1% in 1994 and 2% in 1999. The most common perennial species is scarlet globemallow.

1986 APPARENT TREND ASSESSMENT

Currently there appears to be a good balance between sagebrush and grass on the majority of the area. It is interesting to note the apparent contrasts presented by the exclosure in terms of plant composition and the effects of grazing/ browsing. Sometimes it is difficult to determine a vegetative trend based on only one key species, mountain big sagebrush. There are signs to indicate it was once more abundant, but there are also a good number of young plants. The lack of seedlings could easily be attributed to unfavorable conditions the last few years and with current seed production, it could change anytime. The one definite downward indicator is the increasing number and size of pinyon, although this invasion is occurring slowly. Overall vegetative trend is stable if current management practices are followed and deer numbers don't increase substantially on the winter range. An increase in grazing pressure could be detrimental to the sagebrush, but the fall and/or spring use by livestock can even be more detrimental, especially during a prolonged drought. The soil trend is related directly to the amount of ground cover and trends in that area also appear stable.

1994 TREND ASSESSMENT

The soil trend is down at this time because of the loss of almost half of the litter cover and percent bare ground has risen from 21% to 40%. Much of this downward trend can be attributed to the prolonged drought since 1985. The browse trend would be considered stable for most measured characteristics. Mountain big sagebrush is stable except for the increase in individuals that are considered to have poor vigor, which has risen to 17%. This should turn around with normal precipitation patterns. For the herbaceous understory, the perennial grasses have experienced a sharply significant decrease in their nested frequency values. The perennial forbs are fairly stable, but even when all are combined, they do not contribute much more than 5% of the total vegetative cover. Trend for the herbaceous understory is down.

TREND ASSESSMENT

soil - down

browse - stable

herbaceous understory - down

1999 TREND ASSESSMENT

Trend for soil appears stable due to similar relative percent ground cover characteristics compared to 1994. Trend for browse appears stable for now, but the lack of reproduction for the key species, mountain big sagebrush, is currently low. Utilization is higher than 1994, however vigor has improved and percent decadency is low. The small scattered population of fourwing saltbush appears to be about gone. It's density has declined from 200 plants/acre in 1986, to 120 in 1994, and only 40 in 1999. Utilization is heavy and vigor poor. Trend for the herbaceous understory is stable for perennial species. However cheatgrass, an annual, has increased significantly in nested frequency since 1994. Cover has also increased 5 fold. Taking this into consideration, overall trend for the herbaceous understory is slightly down.

TREND ASSESSMENT

soil - stable

browse - stable for big sagebrush

herbaceous understory - down slightly due to a dramatic increase in cheatgrass

HERBACEOUS TRENDS --
Herd unit 14 , Study no: 11

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover %	
		'86	'94	'99	'86	'94	'99	'94	'99
G	Agropyron smithii	_b 204	_a 69	72	83	30	33	.42	.46
G	Bouteloua gracilis	168	154	163	63	56	57	3.05	5.13
G	Bromus tectorum (a)	-	_a 49	_b 222	-	18	71	.18	5.43
G	Oryzopsis hymenoides	_a -	_{ab} 4	_b 10	-	2	4	.03	.02
G	Poa fendleriana	1	1	-	1	1	-	.00	-
G	Sitanion hystrix	_a 2	_{ab} 12	_b 19	2	5	9	.03	.09
G	Sporobolus cryptandrus	_b 53	_a 3	_a 7	25	1	3	.00	.01
G	Stipa comata	_c 280	_b 178	_a 117	95	66	44	3.65	2.50
G	Vulpia octoflora (a)	-	_b 121	_a 39	-	45	15	.40	.17
Total for Annual Grasses		0	170	261	0	63	86	0.58	5.60
Total for Perennial Grasses		708	421	388	269	161	150	7.20	8.24
Total for Grasses		708	591	649	269	224	236	7.79	13.85
F	Astragalus mollissimus	_{ab} 11	_b 15	_a 1	4	8	1	.09	.03
F	Calochortus nuttallii	2	-	4	1	-	2	-	.03
F	Chaenactis douglasii	-	3	-	-	2	-	.01	-
F	Descurainia pinnata (a)	-	16	16	-	8	9	.04	.04
F	Draba spp. (a)	-	_b 65	_a -	-	28	-	.14	-
F	Eriogonum cernuum (a)	3	5	4	1	3	2	.01	.01
F	Erigeron pumilus	_c 44	_a -	_b 9	24	-	4	-	.02
F	Gilia spp. (a)	-	4	-	-	2	-	.01	-
F	Holosteum umbellatum (a)	-	3	1	-	2	1	.01	.00
F	Lappula occidentalis (a)	-	_b 18	_a 4	-	10	2	.05	.01
F	Mammillaria spp.	3	-	-	1	-	-	-	-
F	Penstemon spp.	-	_B 3	_a 3	-	1	1	.03	.00
F	Phlox hoodii	_a -	_b 19	_b 22	-	8	9	.26	.27
F	Phlox longifolia	_a -	_b 8	_b 16	-	5	8	.02	.06
F	Plantago patagonica (a)	-	_b 99	_a 74	-	41	28	.25	.24
F	Ranunculus testiculatus (a)	-	_a 16	_b 36	-	7	14	.03	.14
F	Senecio multilobatus	3	-	1	1	-	1	-	.03
F	Sphaeralcea coccinea	118	126	139	53	55	58	.60	1.16
F	Tragopogon dubius	-	1	-	-	1	-	.00	-
Total for Annual Forbs		3	226	135	1	101	56	0.56	0.45
Total for Perennial Forbs		181	175	195	84	80	84	1.03	1.62
Total for Forbs		184	401	330	85	181	140	1.59	2.07

Values with different subscript letters are significantly different at % = 0.10

BROWSE TRENDS --

Herd unit 14 , Study no: 11

Type	Species	Strip Frequency		Average Cover %	
		'04	'09	'04	'09
B	Artemisia tridentata vaseyana	44	40	3.49	5.55
B	Atriplex canescens	3	2	.03	.03
B	Ceratoides lanata	0	1	-	-
B	Chrysothamnus nauseosus	0	0	-	-
B	Echinocereus spp.	0	5	.00	.01
B	Ephedra viridis	0	0	-	-
B	Eriogonum microthecum	14	18	.12	.15
B	Gutierrezia sarothrae	18	62	.11	1.12
B	Juniperus osteosperma	-	-	.76	1.88
B	Leptodactylon pungens	0	1	-	-
B	Opuntia spp.	21	26	.16	.55
B	Pinus edulis	0	8	9.51	9.40
B	Symphoricarpos oreophilus	0	0	-	-
B	Yucca spp.	0	0	-	.03
Total for Browse		100	163	14.20	18.76

CANOPY COVER --

Herd unit 14 , Study no: 11

Species	Percent Cover '09
Juniperus osteosperma	4
Pinus edulis	13

BASIC COVER --

Herd unit 14 , Study no: 11

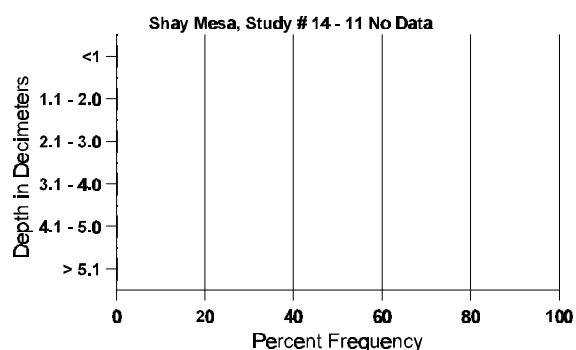
Cover Type	Nested Frequency		Average Cover %		
	'04	'09	'86	'94	'99
Vegetation	313	329	14.00	23.29	33.92
Rock	3	-	0	.01	0
Pavement	4	1	0	.01	.00
Litter	386	367	61.25	36.06	40.02
Cryptogams	134	146	4.25	1.69	5.40
Bare Ground	323	282	20.50	39.61	41.13

SOIL ANALYSIS DATA --

Herd Unit 14, Study # 11, Study Name: Shay Mesa

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
15.8	67.4 (16.6)	7.3	58.9	18.6	22.6	1.5	7.9	83.2	0.6

Stoniness Index



PELLET GROUP DATA --

Herd unit 14 , Study no: 11

Type	Quadrat Frequency		Pellet Transect Days Use/Acre (ha)
	'94	'99	
Rabbit	62	60	N/A
Deer	9	3	1 (2)
Cattle	3	11	26 (64)

BROWSE CHARACTERISTICS --

Herd unit 14 , Study no: 11

A G R E	Y	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches)		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4		Ht. Cr.		
Artemisia tridentata vaseyana																		
S	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
Y	86	5	20	1	-	-	-	-	-	-	21	4	-	1	1733		26	
	94	21	-	-	-	-	-	-	-	-	21	-	-	-	420		21	
	99	3	5	-	-	-	-	-	-	-	8	-	-	-	160		8	
M	86	-	6	1	-	-	-	-	-	-	3	3	1	-	466	23 25	7	
	94	88	-	-	-	-	-	-	-	-	65	4	19	-	1780	18 22	89	
	99	30	44	15	-	-	-	-	-	-	89	-	-	-	1780	22 30	89	
D	86	-	-	1	-	-	-	-	-	-	1	-	-	-	66		1	
	94	4	-	-	-	-	-	-	-	-	4	-	-	-	80		4	
	99	3	1	2	-	-	-	-	-	-	5	-	1	-	120		6	
X	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	180		9	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	220		11	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'86		76%			09%			06%			+ 1%							
'94		00%			00%			17%			-10%							
'99		49%			17%			.97%										
Total Plants/Acre (excluding Dead & Seedlings)												'86	2265	Dec:	3%			
												'94	2280		4%			
												'99	2060		6%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Atriplex canescens																		
S	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	1	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	3	-	-	-	-	-	-	-	-	-	-	-	-	60		3	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	86	-	2	1	-	-	-	-	-	-	3	-	-	-	200	5	3	
	94	1	-	-	-	-	-	-	-	-	1	-	-	-	20	20	30	
	99	-	-	1	-	-	-	-	-	-	1	-	-	-	20	23	21	
D	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	2	-	-	-	-	-	-	-	-	-	-	-	2	40		2	
	99	-	-	-	-	-	-	1	-	-	-	-	-	1	20		1	
X	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'86		67%			33%			00%			-40%							
'94		00%			00%			33%			-67%							
'99		00%			50%			50%										
Total Plants/Acre (excluding Dead & Seedlings)												'86	200	Dec:	0%			
												'94	120		33%			
												'99	40		50%			
Ceratoides lanata																		
M	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	11	11	
	99	-	-	-	-	-	1	-	-	-	1	-	-	-	20	11	12	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'86		00%			00%			00%										
'94		00%			00%			00%										
'99		00%			100%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'86	0	Dec:	-			
												'94	0		-			
												'99	20		-			
Chrysothamnus nauseosus																		
Y	86	-	1	10	-	-	-	-	-	-	11	-	-	-	733		11	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	86	-	1	36	-	-	-	-	-	-	37	-	-	-	2466	15	16	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	9	39	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'86		04%			96%			00%										
'94		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'86	3199	Dec:	-			
												'94	0		-			
												'99	0		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Echinocereus spp.																		
Y	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
M	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	99	2	-	-	-	-	-	-	-	-	2	-	-	-	40	3	6	2
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'86		00%			00%			00%										
'94		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'86	0	Dec:	-			
												'94	0		-			
												'99	100		-			
Ephedra viridis																		
M	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	26	28	0
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20	30	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'86		00%			00%			00%										
'94		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'86	0	Dec:	-			
												'94	0		-			
												'99	0		-			
Eriogonum microthecum																		
S	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	2	-	-	1	-	-	-	-	-	3	-	-	-	60		3	
	99	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
Y	86	3	-	-	-	-	-	-	-	-	3	-	-	-	200		3	
	94	13	-	-	-	-	-	-	-	-	13	-	-	-	260		13	
	99	11	-	1	-	-	-	-	-	-	12	-	-	-	240		12	
M	86	5	-	-	-	-	-	-	-	-	5	-	-	-	333	11	6	5
	94	12	-	-	-	-	-	-	-	-	12	-	-	-	240	3	4	12
	99	5	9	21	-	-	2	-	-	-	37	-	-	-	740	6	5	37
D	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
	99	-	-	-	-	-	2	-	-	-	2	-	-	-	40		2	
X	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	1	-	-	-	-	-	-	-	-	1	-	-	-	40		2	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'86		00%			00%			00%			+ 5%							
'94		00%			00%			00%			+45%							
'99		18%			51%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'86	533	Dec:	0%			
												'94	560		11%			
												'99	1020		4%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Gutierrezia sarothrae																		
S	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
Y	86	21	-	-	-	-	-	-	-	-	21	-	-	-	1400		21	
	94	6	-	-	-	-	-	-	-	-	6	-	-	-	120		6	
	99	30	-	-	-	-	-	-	-	-	30	-	-	-	600		30	
M	86	99	-	-	-	-	-	-	-	-	99	-	-	-	6600	7	5	99
	94	23	-	-	-	-	-	-	-	-	23	-	-	-	460	6	6	23
	99	168	-	-	4	-	-	-	-	-	172	-	-	-	3440	7	7	172
D	86	4	-	-	-	-	-	-	-	-	4	-	-	-	266		4	
	94	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
	99	4	-	-	-	-	-	-	-	-	2	-	-	2	80		4	
X	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	80		4	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'86		00%			00%			00%			-92%							
'94		00%			00%			00%			+84%							
'99		00%			00%			.97%										
Total Plants/Acre (excluding Dead & Seedlings)												'86	8266	Dec:	3%			
												'94	640		9%			
												'99	4120		2%			
Leptodactylon pungens																		
M	86	14	-	-	-	-	-	-	-	-	14	-	-	-	933	1	3	14
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20	-	-	1
D	86	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'86		00%			00%			00%										
'94		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'86	999	Dec:	7%			
												'94	0		0%			
												'99	20		0%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Opuntia spp.																		
S	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
Y	86	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	94	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
	99	7	-	-	-	-	-	-	-	-	7	-	-	-	140		7	
M	86	3	-	-	-	-	-	-	-	-	3	-	-	-	200	3	4	3
	94	19	-	-	-	-	-	-	-	-	18	-	1	-	380	3	11	19
	99	30	-	-	-	-	-	-	-	-	30	-	-	-	600	6	13	30
D	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	7	-	-	-	-	-	-	-	-	7	-	-	-	140		7	
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
X	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	60		3	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'86		00%			00%			00%			+54%							
'94		00%			00%			03%			+24%							
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'86	266	Dec:	0%			
												'94	580		24%			
												'99	760		3%			
Pinus edulis																		
S	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
Y	86	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
M	86	2	-	-	-	-	-	-	-	-	2	-	-	-	133	114	45	2
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	99	5	-	-	-	-	-	1	-	-	6	-	-	-	120	-	-	6
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'86		00%			00%			00%										
'94		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'86	199	Dec:	-			
												'94	0		-			
												'99	160		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Symphoricarpos oreophilus																		
M	'86	-	2	1	-	-	-	-	-	-	-	2	-	1	200	15	22	3
	'94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	'99	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'86			67%			33%			33%							
		'94			00%			00%			00%							
		'99			00%			00%			00%							
Total Plants/Acre (excluding Dead & Seedlings)												'86	200	Dec:	-			
												'94	0		-			
												'99	0		-			
Yucca spp.																		
M	'86	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	'94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	33	38	0
	'99	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'86			00%			00%			00%							
		'94			00%			00%			00%							
		'99			00%			00%			00%							
Total Plants/Acre (excluding Dead & Seedlings)												'86	0	Dec:	-			
												'94	0		-			
												'99	0		-			